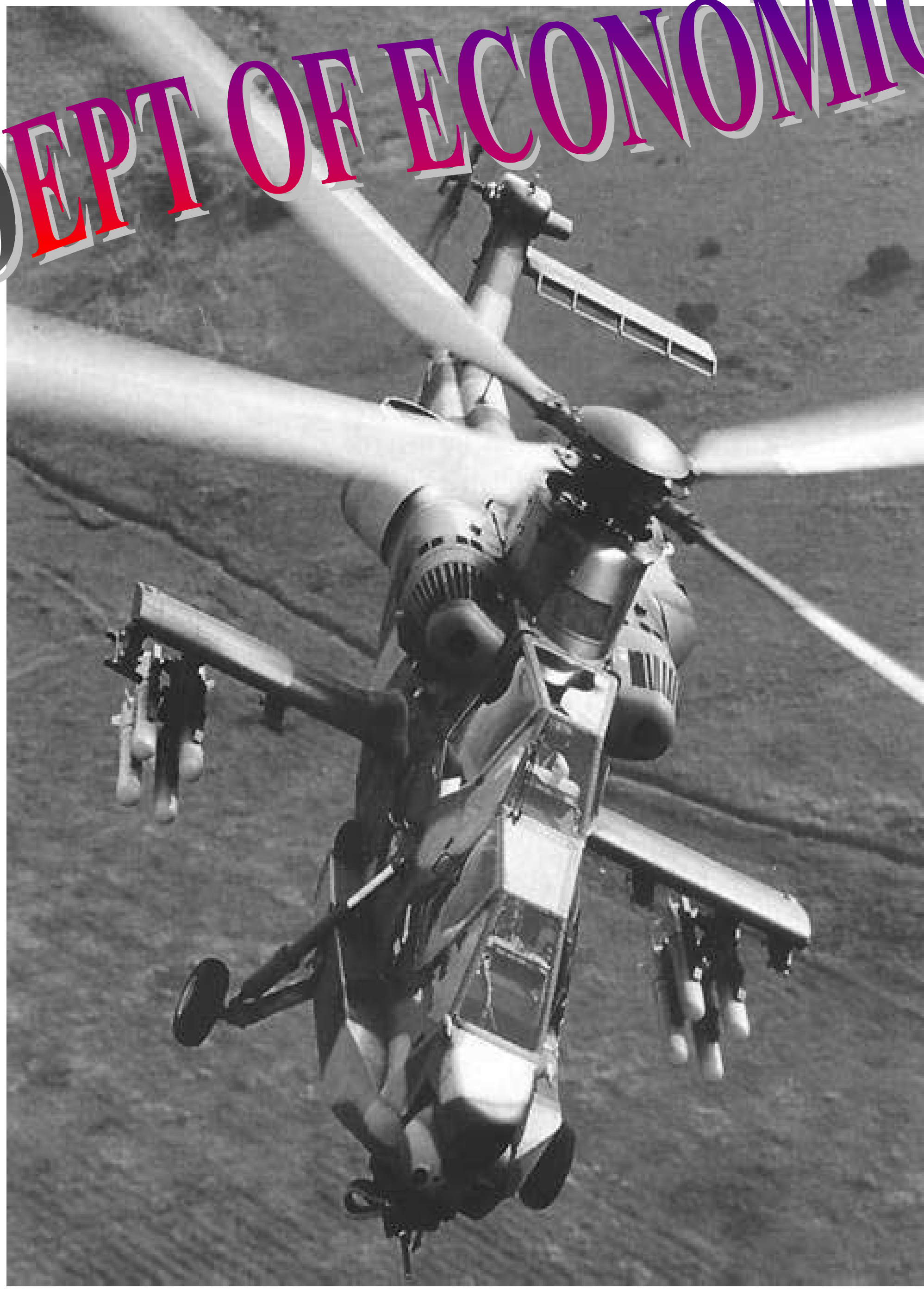
DEPT OF ECONOMICS



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THE PRIVATIZATION OF DENEL FROM A COMPETITION PERSPECTIVE[1]

[1] I would like to thank Mr Hans Pretorius (GED: Aerospace) and Mr F. Botha (CEO: Denel) for their help and interest.

CONTENTS

1. INTRODUCTION

South Africa mostly depended on foreign suppliers for its defence needs up to the beginning of the 1960's. This situation changed dramatically with the implementation of various isolation measures and an international arms embargo in the early 1960's. This compulsory arms embargo on the import and export of armaments to and from South Africa compelled the South African government to become self-sufficient in terms of its defence needs, thus directly contributing to the inception of Amscor[2] and later Denel (Coetzee, 97: 22). Denel, one can argue, would not be in existence today if it were not for the international arms embargo and the subsequent drive for self-sufficiency.

Denel (Pty) Ltd was established as a private company, incorporated in terms of the Companies Act on 1 April 1992 with the State as the sole shareholder. The Company is managed by a Board of Directors, appointed by the Minister for Public Enterprises and is an autonomous group (Denel, http://www.denel.co.za/ corporate/default.htm). Denel is thus a public firm doing business as a private company and its core business is defence, i.e. development, manufacturing, research, etc of armaments and related systems/products. Denel, however, can not be regarded as a normal consumer orientated company, because of the nature of its core business, i.e. armaments. Armaments have the ability, among others, to kill and destroy; things that other consumer products and services are not capably of or intended to do.

Privatization is in this modern era of market domination/new economy very much the buzzword. The perceived benefits of privatization are also advocated quite rigorously in South Africa and include the traditional arguments against public firms: a low rate of return on capital, modest productivity, unsatisfied customers, lack of clear objectives and political and bureaucratic meddling in management (Majone, 1990: 140). The South African Government has shown interest in privatizing Denel, but is the process already 6 years on the road; a road characterized without real progress.

Denel can at present, without doubt, be regarded as a public monopoly. Traditional theory tells us that privatization of a public monopoly neither ends the monopoly power nor the possibility of the use of this power at the consumers expense. The absence of competition can thus induce the monopolist to decrease production and so to increase prices. There is also the fear of job losses, especially in South Africa with its very high unemployment rate and the fear of unregulated armaments sales and exports especially to fundamentalists and governments with poor human rights records.

I will in this paper argue for the immediate and full privatization of Denel. Competition fears does not seem to be justified as I will demonstrate that competition in the arms industry at present is as strong as ever in history.

[2] The Armaments Development and Production Board of South Africa (Armscor) was established in 1968 and in 1976 became the Armaments Corporation of South Africa. Armscor was divided into two separate organizations in April 1992, i.e. Armscor and Denel. See White Paper on the South African Defence Related Industries for more information, http://www.gov.za/whirepaper/1998/defence/defence2.htm.

2. GLOBAL TRENDS IN ARMRS PRODUCTION[3]

Declining military expenditure[4] and expenditure for arms procurement during the post-cold war period have resulted in major changes in the production of armaments and in the world arms industry. Not only has there been a reduction in the level of arms production in most parts of the world. There has also been a profound restructuring of the industry. Available data for the top 100 arms-producing countries in the OECD and developing countries (except China) show that the decline in the volume of arms production declined by about one third between 1990 and 1995. Since then it has levelled off and stayed roughly constant in real terms between 1995 and 1998. In 1998 the combined arms sales of the SIPRI top 100 companies amounted to US$ 155 billion. The process of concentration in the arms industry of the main arms-producing countries has continued. During 1999 the main developments in the concentration process were:

(a) The process of rapid concentration in the USA, which began around 1995 and included a number of 'mega-mergers', had largely come to an end among the largest companies. During 1999 the newly formed giant companies experienced sharp falls in profits and share prices and were preoccupied with consolidation.

(b) The creation of the first major international arms-producing company in Europe was agreedóthe tri-national (France, Germany and Spain) European Aeronautics, Defence and Space Company (EADS). This decision was followed by a series of decisions to set up cross-border joint ventures, which combined entire sectors of military production of the companies involved.

(c) In several countries in other regions of the world a greater acceptance emerged of foreign ownership in their domestic arms industries. The rationale for this shift in defence industrial policies appears to be the difficulty of maintaining a national military industrial capability in an environment of increasing costs and international competition in arms production. This is very true for Denel and is the search for a foreign equity partner precisely because of the declining South African defence budget. This is by no means the only reason, for the international exposure that a foreign company will give Denel is just as important.

The restructuring of arms production continued in 1999, while the decline in the general level of arms production appears to have ceased towards the end of the 1990s. The aggregate arms sales of the SIPRI top 100' arms-producing companies in the OECD and developing countries, which account for roughly three-quarters of total world arms production, declined by 29% during the first half of the 1990s, but by only 3% during the period 1995–98 (SIPRI, http://editors.sipri.se/pubs/yb00/ch6.html).

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[3] Information obtained from the Stockholm International Peace Research Institute (SIPRI), http://projects.sipri.se/milex/aprod/trends.html

[4] Military expenditure decreased from 5% of global GNP at the end of the eighties to about 2% of global GNP at the end of the nineties (Bonn International Center for Conversion).

The restructuring process in the OECD arms industries in the 1990s has resulted in greater concentration, particularly among the larger companies, and in diversification from military to civilian products in industries and in individual companies. A few companies, including Denel, have tended instead to specialize in military production, thereby increasing their dependence on arms sales and often also on arms exports. To this end Denel has indicated that it sees increase exports as imperative. Earnings from exports increased in 1999 with R1.3 milliard against R1 milliard in 1998. This trend could, if sustained, wipe out its financial losses (http://.news24.com/Sake/Maatskappye/0,1781,6-107_924336,00.html).

Table 1: Regional/national shares of arms sales for the top 100 arms producing companies in the OECD and developing countries in 1998

Number of companies 1998	Region/country	Percentage of total arms sales 1997	Percentage of total arms sales 1998	Arms sales (US $b.)
39	USA	55.5	56.0	86.6
38	*West European OECD*	*35.6*	*36.0*	*55.4*
13	UK	15.4	16.2	25.0
11	France	11.6	10.9	16.9
6	Germany	3.5	3.8	5.9
2	Italy	2.3	2.3	3.5
3	Sweden	1.3	1.4	2.1
1	Spain	0.7	0.7	1.0
2	Switzerland	0.8	0.7	1.0
12	*Other OECD*	*5.1*	*4.5*	*6.9*
7	Japan[d]	4.2	3.5	5.4
2	Australia	0.4	0.4	0.6
2	Canada	0.3	0.3	0.5
1	Turkey	0.2	0.3	0.4
11	*Non-OECD countries*	*3.8*	*3.5*	*5.6*
6	Israel	2.0	2.1	3.3
3	India	1.0	0.8	1.3
1	Singapore	0.5	0.4	0.6
1	South Africa	0.3	0.2	0.4
		100.0	**100.0**	**154.5**

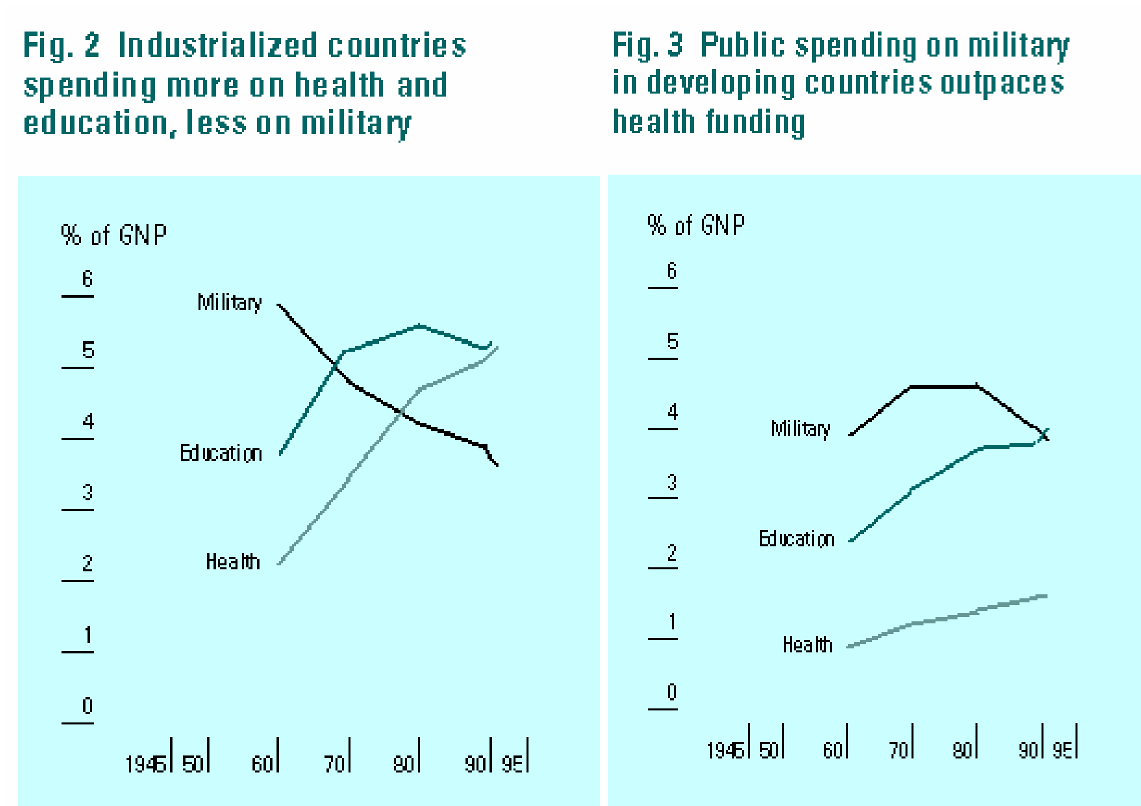
(http://projects.sipri.se/milex/aprod/trends.html)

South Africa's contribution to global arms sales has decreased from a very modest 0.3 percent in 1997 to 0.2 percent in 1998 (table 1). Table 1 also demonstrates the fact that the world arms market are dominated by a handful of companies, all in industrialized countries, with the rest fighting for niche markets. Denel was rank number 68 of the 100 largest arms-producing companies in the OECD and developing countries in 1998, unfortunately one place weaker than in 1997. Denel are thus by no means not a world player and has had some very good success stories over the past years.

As mentioned global defence spending/procurement was been declining for the past 10 years. Competition without a doubt has increased globally and has domestic companies no choice, if they want to stay in business, to become global. There is at present an over supply of armaments, especially from the former Soviet countries, causing the price of armaments to decrease quite significantly. According to Prof. Roux[5] there is to many arms chasing to little wars. Decreasing prices are associated with supply greater than demand. Costs have however not decreased thus butting pressure on profit margins. This situation can best be rectified if and only if Denel is a privately own company. Denel, for example, would be able to increase its efficiency, both allocative and technical, by maximizing its economies of scale and would also have a greater incentive to initiate and implement cost-saving innovations.

Denel also has seen local demand decreasing to levels potentially threatening to the continued existence of Denel. The domestic defence market declined by over 50% between 1989/90 and 1996/97, with an average decline of 10% per annum.[6] Denel is thus forced to penetrate the international defence market and can no longer do business as a state controlled/owned enterprise if it's to survive the rough and cruel global arms market. Charts 1 and 2 and graph 1 give some more evidence of the declining global demand for armaments and can be interpreted as evidence of increased competition. This is also evidence of the perceived “peace divided” that is associated with declining defence budgets.

Charts 1 & 2: The shrinking world defence markets



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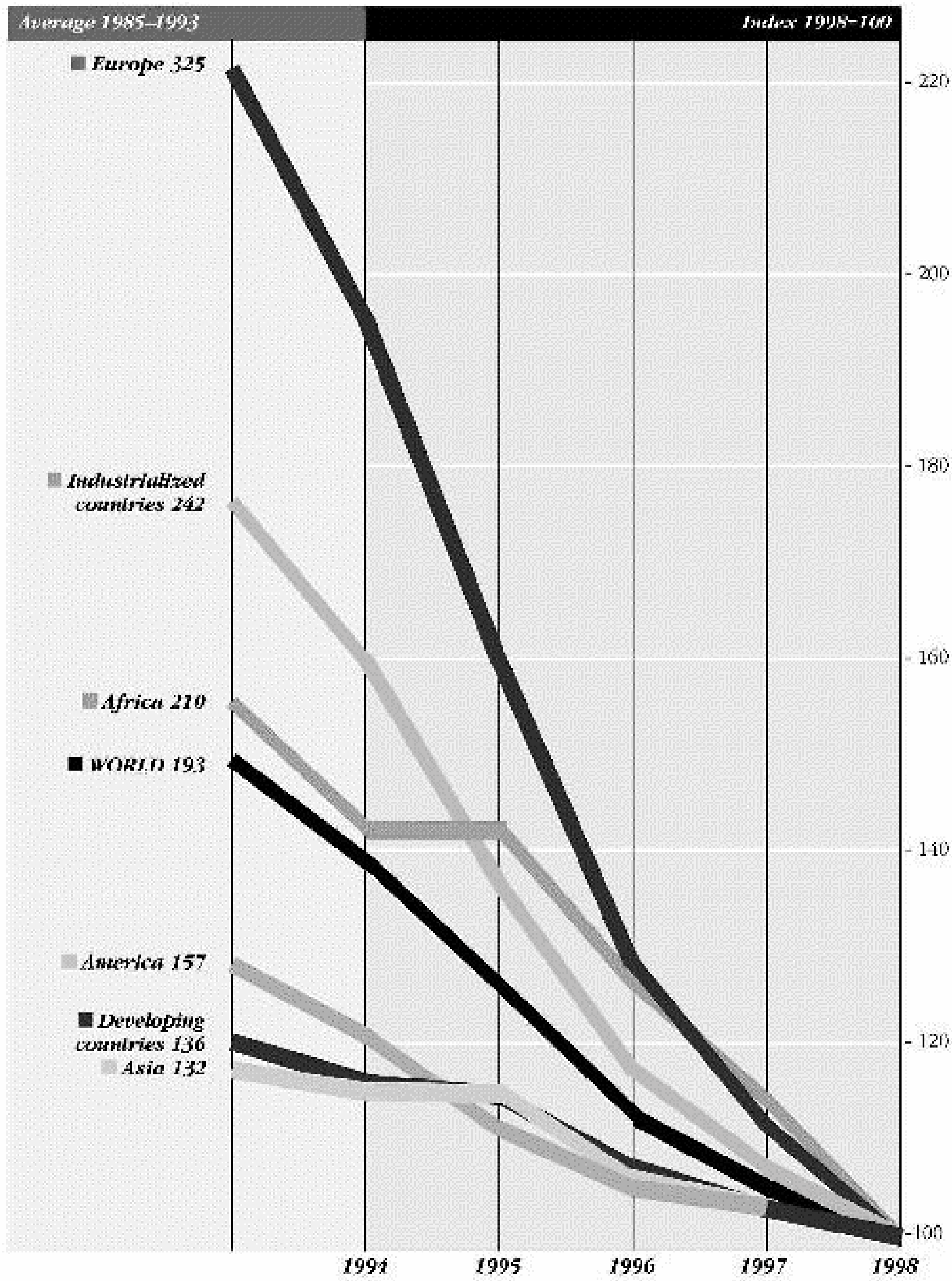
[5] Discussion with Prof. A. Roux, Director of the Institute for Future Research, University of Stellenbosch.

[6] Domestic defence market as measured by domestic acquisition spending , http://www.gov.za/whirepaper/1998/defence/defence2.htm

Graph 1: Trends in employment in arms production in world regions, 1985-1998 Values based on index 1998=100



(Bonn International Center for Conversion (BICC) Survey 2000, p 69)

3. DENEL, PRIVATIZATION AND COMPETITION

John Moore (1983) wrote that the long-term success of a privatization programme would stand or fall by the extent to which it maximizes competition. If competition cannot be achieved, an historic opportunity will be lost (Veljanovski, 1989: 26).

The State Owned Enterprises (Transnet, Telkom, Portnet, Denel and Eskom) that is currently up for privatization has monopolistic power and to privatize without introducing competition would be senseless. Veljanovski (1989: viii) argues that the most profound weakness of the British privatization programme was the failure to maximize the opportunities to introduce competition. One of the goals of a privatization programme must therefor be to introduce greater competition and market forces. This is not to say that in the genuinely monopoly component of industries there is not an important role to be played by the regulation of prices and terms in creating a fair trading environment and protecting customers from monopoly abuses.

The notion that a competitive market for some products is inefficient or impossible has been very common, but it is unlikely that there are many industries in which technical factors alone require for efficiency a minimum scale of production so large that competition between efficient units is impossible. The nature of Denel's core business seems to rationalize such an exception. The local defence market has declined to such an extent that it is virtually impossible for two or more big defence firms to co-exist solely in the local market. This is also a worldwide phenomenon; i.e. the globalization of the defence market.

From the previous discussion, charts and graph it seems clear that arms manufacturers (Denel included) are in a battle for survival. A few large defence companies in die United States of America and Europe dominate the industry. Smaller players are therefor expected to join forces with major international players to obtain contracts and sales. Declining domestic arms markets forced arms companies to expand their efforts to foreign markets. Increased exports were seen as the means for survival. This however did not come easy and without serious problems.

Not only are foreign markets/demand also shrinking, making exports very difficult, but are the sale and exports of arms becoming more and more a moral and social issue rather than an economic one. This means that companies like Denel can not sell/export arms to anybody. I would think that this might be very necessarily because of the nature of arms, for example it might restrict profits but it might save lives. There are some very strict guidelines that countries/governments must comply with before arms are allowed to be sold on foreign markets. This might be a rational for state ownership of Denel as one can argue that the state can control the sale of arms more effectively than if under private ownership, i.e. the profit motive overrides social principles.

The South African government established the National Conventional Arms Control Committee (NCACC) to oversee arms sales and exports, thus disproving this argument. Denel thus would not be allowed to sell arms without the approval of the NCACC. The

NCACC recently stated (http://www.news24.com/News24/South_Africa/0,1113,2-7_932983,00.html) that it was proud of the integrity of its arm control regulatory process directly implying that state ownership is not imperative for South Africa to comply with international law and guidelines.

South Africa has also rejoined the international community and can thus import its arms requirements, thus contributing to increased global competition. Denel thus does not have monopolistic power in the domestic market anymore; i.e. it must compete with foreign suppliers for local contracts. The South African government has also indicated that it would not give preferential treatment to domestic firms. This being clearly demonstrated by the choice of a new trainer aircraft for the South African Air Force and the choice of suppliers for the new arms procurement packages.

By the very nature of the defence market, the major--and exclusive--buyers of defence output are national governments. As a result of this relationship, defence contractors are dependent to a great extent on a monopsonistic domestic purchaser. National military requirements often dictate product lines, product design and production runs. Procurement procedures traditionally involve a payment system--fixed price, cost-plus or some mixture; a bidding system--competitive tender or single supplier; a market--buying from domestic, European or American firms; and a system for contract renegotiation when conditions change.

In the value for money approach, the government bases procurement on cost-benefit analysis and purchases from the source that provides the best value--the best quality-price combination. Both national industries and foreign competitors stand--in principle--equal chances of being selected.

According to NATO[7] economics alone, i.e. spiral research and development costs, declining defense budgets, and deteriorating national economies of scale, dictate the need to consolidate and cooperate (http://www.nato.int/acad/conf/ameuro97/04-a.htm). There is at present an enormous overcapacity in the global defence and ordnance industries and the subsequent increase in competition between defence suppliers eroded the profitability of the industry. There are thus some real challenges for Denel in terms of competition and penetrating export markets.

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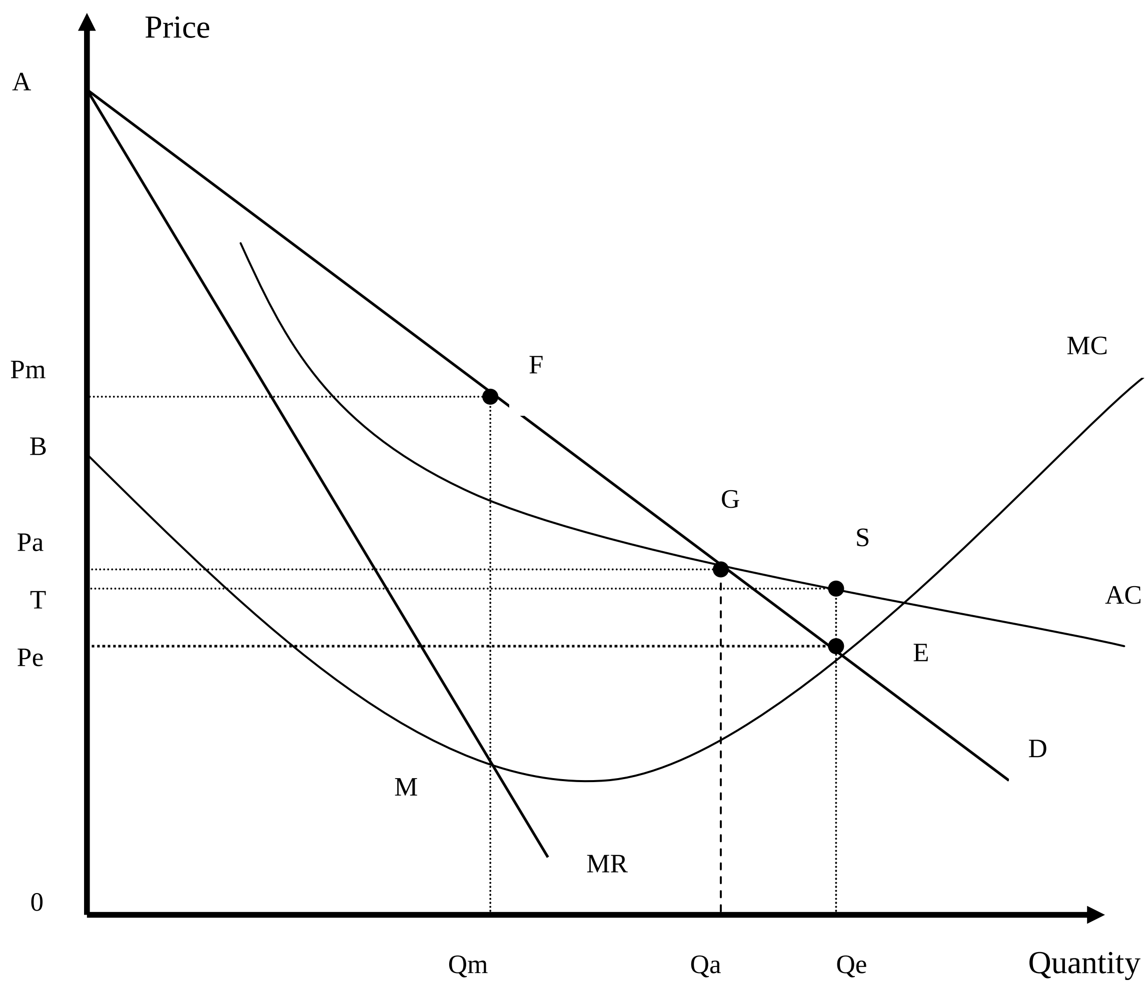
[7] North Atlantic Treaty Organization (NATO). The North Atlantic Treaty was signed in Washington on 4 April 1949, creating an alliance of 12 independent nations committed to each other's defence. More information visits NATO's website, http://www.nato.int/#

4. DENEL AS A NATURAL MONOPOLY

An industry, according to Black and Dollery, is said to be a natural monopoly if it is characterized by large capital outlays that give rise to economies of scale over the entire range of output. The minimum average cost of production may thus occur at a level of output sufficient to supply the whole marker. Only one firm can effectively operate in such a market. This is the typical scenario facing Denel. Figure 1 illustrates a natural monopoly, if not controlled by government, to maximize profit at point M where marginal cost equals marginal revenue. At point M the equilibrium price, OPm, exceeds marginal cost while the corresponding level of output, OQm, is smaller than the Pareto-optimal level, OQe. The profit-maximizing behaviour of the monopolists thus results in to little output being produced at too high price giving rise to concomitant loss of welfare. This is one reason for the public ownership of Denel, but as demonstrated in the previous heading this argument does not seem to hold in the globalised armaments market. There is thus reason to believe that Denel produce at price OPe and output OQe, i.e. where marginal cost equal the market price/demand. Denel is thus behaving as in a perfectly competitive market.

Figure 1



Even if Denel is behaving like a natural monopoly, i.e. price OPm and output OQm, it stands to reason that the loss of welfare while be very small if any at all. This is because of the nature of Denel's products, meaning that we can not treat armaments like other consumer goods/products. Ordinary citizens does not buy armaments, thus are not directly affected by the price and output of armaments. Armaments are also not a public good, i.e. its not a necessary or social good or commodity. This is where Denel and for example Eskom and the other SOE's differ. There is thus no reason to keep prices low.

The main reason why Denel come into being was the drive for self-sufficiency. Denel was of strategic importance to the apartheid regime. Clearly this is not the situation any more, but one can argue that South Africa still needs to maintain some arms manufacturing capability. No country would like to be totally dependant one foreign countries for its armaments needs as military production is generally seen as lying near the core of national sovereignty. Markusen[8] makes an extremely compelling case against the privatization of national security.

Markusen argues that a wholesale move towards privatization endangers the relative transparent, arms-length relationship between Defence Departments and armed services, on the one hand, and private sector military goods and service producers on the other hand, with potentially large adverse consequences for effective democratic restraints on the evolution and use of military force. Markusen also say that effective competition is essential. This is because private contractors are fundamentally profit-seeking firms whose first loyalties are to their shareholders, clearly not the situation at present with Denel. If competition is absent, contractors can be expected to raise prices, suppress innovation and quality, hide information about true costs and product/service traits, i.e. to engage in opportunistic behaviour which creates "moral hazard" for the defence consumer. Further arguments against privatizing defence industries, i.e. the treating of armaments as a public good is the following:

a. Most contracts are relatively long term and even if competitively bid, it create a bilateral monopoly once signed.
b. Even where there is persistent competition, it is often oligopolistic in nature and increasingly so, with the dramatic implosion in the number of large prime contractors in the mid-1990s.
c. Ensuring and policing competition is an expensive project and would defence managers rather not have to hassle with the procedures, political pressure and staff time involved.
d. The success of private position of defence goods and services depends heavily on the defence client's ability to monitor cost, quality and performance. This is not always practical and involves costs.
e. Private firms can disrupt supply, for example the sale or dismemberment of the firm, or bankruptcy. There is also the issue of corruption with the allotment of contracts and the potential erosion of defence employee expertise.

[8] Discussion paper at the Study Group on the Arms Trade and Transnationalization of the Defence Industry, Council on Foreign Relations, New York, October 1 1999.

5. PRIVATIZING DENEL

Denel represents massive financial, investment, labour, technology and infrastructure resources. Denel thus have a role to play in the South African economy and it can only maximize its contribution when no longer a state owned enterprise. The complete and immediate privatization will ensure that Denel can grab the current opportunities that presents itself, like the increase in foreign investment in South Africa, the approval of the defence procurement packages, the slight increase in the world demand for armaments and the weakening rand.

Defence-related enterprises in South Africa did not only see their local market declining, a major sources of their revenue, but can no longer count on the backing of the state that until a few years ago had assured their privileged position. Due to radical defence budget cuts there is a drastic drop in state orders. This meant the loss of stable and comfortable local markets. In addition, since the SANDF up to now, did not order new weapons, the industry was deprived of their references that facilitated export promotion.[9] The local defence enterprises thus could not benefit from the integration of South Africa into the world markets and lost valuable export opportunities.

According to the new, market-oriented ideology, the state is expected to reduce radically its direct involvement in economic life. It was envisaged that the previous practice of maintaining, protecting, partially financing and, if needed, rescuing defence industry enterprises should definitively come to an end. The direct forms of state protection, special subsidies, access to investment and credits, tax-, export- and import allowances, and specific forms of remuneration were supposed to disappear as well.

Several years ago most of the literature on military markets dealt with defence conversion, or how to transform large defence-industrial complexes into viable commercial producers. The emphasis since then has shifted significantly, in some measure because part of the problem in most economies was precisely due to the fact that the state had pushed military firms into all manner of barely viable commercial undertakings which simply dissipated their focus. Moreover, conversion oftentimes was hampered by limited resources, falling demand on civilian markets and the continued burdensome presence of the state. While defence conversion has been rule out by Denel the emphasis is now more on how best to integrate into greater global markets while ensuring that national procurement needs can be met at reasonable costs.[10]

The American defence industry, for example, is concentrated around a small number of giant companies. Restructuring was rapid, in response to the changed security environment and shrinking defence budgets. A principal factor behind this swift reaction is private ownership, which implies both the capacity for reaction, and the ability to react without state involvement. At the same time, the Pentagon supports the largest American defence contractors by generous R&D funding, export promotion and national procurement policy. The general objectives of American companies are not too different

[9] This was clearly demonstrated with Denel's efforts to export the "Rooivalk" attack helicopter.
[10] Discussions with Mr Hans Pretorius GED: Aerospace Denel.

than those of their European counterparts: profits, market share, productivity, technological innovation.

The new imperative has far-reaching and not always complementary ramifications, among which are: (i) the need to move from a culture once based strictly on engineering to one which makes it possible to meet ever higher technological requirements through flexible manufacturing techniques and keen attention to the desires of the customer; (ii) the need to incorporate new marketing and cost reduction strategies that exploit comparative advantages while abandoning the manufacture of products in which no comparative advantage exists; (iii) the need to discern and exploit potential synergies between military and civilian products particularly in electronics, materials, optics and avionics; (iv) the need to privatize or, at least, commercialise state owned firms while integrating them into broader regional and global markets; (v) the need to preserve a core defence industrial capability while nevertheless integrating that sector into a broader international chain of investment, production and trade; (vi) the need to import military related equipment and parts from a broader range of countries and manufactures and to develop more diversified export markets particularly in light of the collapse of traditional markets; (vii) the need to ensure national, political and industrial leaders a place at the table as Europe itself builds a more integrated defence market (Central European Defence Markets, http://www.naa.be/publications/comrep/1998/ar279ecew-e.html).

There are two crucial questions that Denel's management had to, must decide if it is to stay in business, i.e. product profile changes and enterprise reorganization. It seems like Denel has opted to become entirely military-orientated and for genuine enterprise restructuring. Genuine enterprise restructuring has not as yet materialized because of government's ownership of Denel. We have seen formal reorganization and decentralization, but the goal must be genuine enterprise restructuring which can only be achieved with the privatization of Denel. This will eventually lead to the continued and profitable existence of Denel. Long drawn out privatization strategies have made corporate planning very difficult and dissuaded potential partners from entering into long-term arrangements. Given the strategic value of the defence sector, its close identity with national sovereignty, and the often times conflicting need to keep procurement costs down, government hesitations about privatization strategies is palpable, and this hesitancy can and do contributed to a general climate of uncertainty.

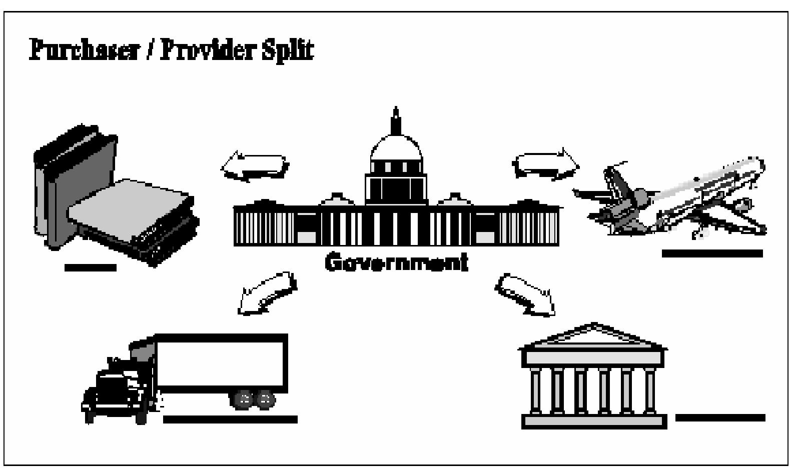
In order to survive in the new economic environment that faces Denel it has tried to reduce their overhead costs radically. Massive redundancies, internal reorganization and productivity enhancing measures served this purpose. Denel are also trying to get rid of its non-core business activities and with privatization will it be possible to transfer its social services. A list of possible and/or all ready implemented measures embarked on by Denel is illustrated in Table 2; measures that will ensure a lean and mean Denel that are globally competitive and economic viable to the benefit of Denel, its shareholders, the state and ordinary tax payers/citizens.

Table 2: Checklist of measures embarked on or not by Denel[11]

Decentralization	
Creation of independent daughter companies	No, rather consolidating to become globally competitive
Becoming independent	Yes, doing business as a private company
Internal reorganization	
Formal reorganization	Ongoing process to become sustainable
Genuine restructuring	Sell 20% stake of Denel Aerospace to BAE
Facility use	
Reusing facilities for new purposes	Yes, but its very difficult and costly
Renting out facilities for outside partners	Yes, optimize resources
Human capital management	
Reduction	Yes, but according to law, +/- 50% reduction
Retraining	Yes
Hiring (selective)	Tendency towards contract workers
New markets	
Internal	Internal market is dead
External	Gulf, Middle East, Pacific Rim, Europe
FDI or foreign cooperation	
In civilian production	No
In military production	Foreign equity partners (BAE)
Investment	
	No, but are considered
Financing	
State subsidy	No, but do pay taxes
Loans	Internal financing and banks
Foreign financing	No
Social infrastructure	
Preserved (partially)	Yes, 20-30 mil per annum on training
Transferred to other institutions	No

(Kiss, 1999; http://www.ilo.org/public/english/employment/strat/publ/etp32.htm)

Splitting government as supplier and customer of armaments is also a rational for the privatization of Denel as illustrated here under.



Splitting policy functions from service delivery creates incentives for governments to become more discriminating consumers by also looking beyond government monopoly providers to a wide range of public and private providers, i.e. increased competition. (http://www.privatization.com/)

[11] Discussion with Mr Hans Pretorius, GED: Aerospace

6. SUMMARY AND CONCLUSIONS

War-fighting itself is undergoing a profound revolution as a result of technological advances and related strategic and tactical changes which, among other things, increasingly stress tactical and strategic mobility, smart weaponry, advance communications and information warfare. Services like installation, maintenance, trouble-shooting, operating and integrating are also becoming lucrative and can be seen as an expanding market. The international tendency is also for greater integration and concentration, international collaboration and restructuring with an eye to focusing resources on those niches where a potential for comparative advantage exists. Denel must take cognizance of these new developments, not only for survival reasons, but to become a world player. Denel as I have argued would be in a better position to meet the global challenges and tendencies if under private control, i.e. the privatization of Denel.

In this paper I mainly placed emphasis on the benefits for Denel if privatized, but it is also the South African economy as a whole that will hugely benefit from the privatization of Denel. The privatization of state-owned assets will generate at least 40 billion rand for South Africa over the next three years of which Denel will contribute a significant part. The bulk of the money will come from direct investment. Savings, or postponed consumption, are probably South Africa's most important fundamental economic weakness, meaning that the economy does not grow fast enough because of inadequate investment. Investment is to low because of high interest rates, and interest rates are too high because of low savings. Privatization will thus contribute to economic growth, via higher investments, lowering of government dissaving and debt and increase in foreign exchange. Privatization can also contribute to the government's aim of black empowerment by earmarking shares for black investors.

There are thus real merits to privatize Denel as soon as possible, especially because Denel has hugely improved its financial position the past year. Denel has posted a turnaround of about R0.5bn to resort a net loss of R206m for the financial year 1999/2000 compared with a R745m loss previously. The group increased gross revenue by 20% to R3.4bn from R2.8n. Denel hope to break-even in the 2000/2001 financial year and move into profit from 20001/2002.

From a competition perspective it does not seem if Denel can behave like a monopoly any more. The international armaments market has become very competitive. Denel thus has to become globally competitive and effective if it's to stay in business. A further rational for the privatization of Denel.

Future research about Denel include determining the price setting behaviour of Denel, the various forms of externalities associated with Denel's activities, for example technology spill overs, export promotion and markets and Denel's contribution to the South African economy.

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